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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,612	08/28/2003	Yoshitsugu Kato	1035 -466	5283

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EXAMINER	
PRETLOW, DEMETRIUS R	
ART UNIT	**PAPER NUMBER**
2863	

DATE MAILED: 06/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/649,612	KATO ET AL.	
	Examiner	Art Unit	
	Demetrius R. Pretlow	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-8 and 11-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *4,15 and 16* is/are allowed.

6)☒ Claim(s) *1,5-8,11,12,17 and 18* is/are rejected.

7)☒ Claim(s) *13 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 8,12,17,18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims fail to produce a useful, concrete and tangible result. For example, no result is stored , displayed or conveyed to the user. See http://www.uspto.gov/web/offices/com/sol/og/2005/week47/patgupa.htm.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,5,6 rejected under 35 U.S.C. 102(e) as being anticipated by Kozlowski et al. (2003/0184307) Kozlowski et al. teach a load applying section for applying a current to a battery. Note paragraph 86, lines 9-13. Kozlowski et al. teach a measuring section measuring input output characteristics of the battery in response to the applied load. Note paragraph,63, line 8, paragraph 65, lines 1-5. Kozlowski et al. teach said battery state diagnosing applies the load to the battery as a current load. Note

paragraph 86, lines 9-13. Kozlowski et al. teach a diagnosing section diagnosing a state of the battery by applying a transient result (Note Figure 1 item 14, displaying impedance) obtained from a mathematical expression obtained by a system identification method. Note paragraph 42, lines 1-8 and paragraph 57, lines 1-7.

In reference to claim 5, Kozlowski et al. teach the limitations above, Kozlowski et al. does not explicitly teach load applying section applies current to the battery when the battery is not supplied with fuel. However this limitation would be deemed inherent to the charging of batteries. Note paragraph 86, lines 11-14.

In reference to claim 6, Kozlowski et al. does not explicitly teach a circuit section for constituting a closed circuit by serially connecting the battery to a current load when diagnosing the battery, however this is deemed inherent to the charging of the battery in which the charging data is used to diagnose the battery. Note paragraph 42, lines 4-8. Kozlowski et al. teach a measuring section, connected to the circuit section, for measuring a terminal voltage of the battery and current flowing in the circuit section. Note paragraph 34, lines 1-6. Kozlowski et al. teach a diagnosing section diagnosing by the system identification method, a state of the battery based on a transient result (Note Figure 1 item 14, displaying impedance) obtained from the measuring section. Note paragraph 42, lines 1-8 and paragraph 57, lines 1-7.

In reference to claim 7, Kozlowski et al. does not explicitly teach a circuit section for constituting a closed circuit by serially connecting the battery to a voltage source when diagnosing the battery, however this is deemed inherent to the charging of the battery in which the charging data is used to diagnose the battery. Note paragraph 86,

line 9-11 and paragraph 42, lines 4-8. Kozlowski et al. teach a measuring section, connected to the circuit section, for measuring a terminal voltage of the battery and current flowing in the circuit section. Note paragraph 34, lines 1-6. Kozlowski et al. teach a diagnosing section diagnosing by the system identification method, a state of the battery based on a result of the measurement by the measuring section. Note paragraph 42, lines 1-8 and paragraph 57, lines 1-7.

Claim Objections

Claims 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In reference to claim 13 the prior art of record does not teach the inclusion of the limitations of an the measured output characteristic is a terminal voltage of the battery; And the diagnosing section removes an electromotive force component of a fluctuating terminal voltage of the battery to obtain the transient result, and amplifies this transient result for diagnosis by the system identification. It is these limitations found in each of the claims, as they are **claimed in the combination**, that has not been found, taught or suggested by the prior art of record.

In reference to claim 14 the prior art of record does not teach the inclusion of the limitations of an the measured output characteristic is a terminal voltage of the battery; the diagnosing section is operable to; separate a fluctuating terminal voltage of the battery into a perpendicular component which derives from a serial resistance of the

battery, and a component representing Capacitance-Resistance dynamics; remove the perpendicular component from the terminal voltage to obtain the transient result; and amplify the transient result obtained after the perpendicular component has been removed for diagnosis by the system identification. It is these limitations found in each of the claims, as they are **claimed in the combination**, that has not been found, taught or suggested by the prior art of record.

Allowable Subject Matter

Claims 4,15,16 are allowed.

The primary reason for the allowance of claims 15 is the inclusion of the limitations of the measured output characteristic is a terminal voltage of the battery; and when diagnosing the battery by system identification, an electromotive force component of a fluctuating terminal voltage of the battery is removed as a bias, and a voltage fluctuation after the electromotive force component has been removed is amplified and used for the diagnosis by the system identification. It is these limitations found in each of the claims, as they are **claimed in the combination**, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

The primary reason for the allowance of claims 4 and 16 is the inclusion of the limitations of an the measured output characteristic is a terminal voltage of the battery; and when diagnosing the battery by a system identification, a fluctuating terminal voltage of the battery is separated into a perpendicular component which derives from a serial resistance of the battery, and a component representing Capacitance-Resistance

dynamics; the perpendicular component is removed from the terminal voltage', and a voltage fluctuation after the perpendicular component has been removed is amplified and used for the diagnosis by the system identification. It is these limitations found in each of the claims, as they are **claimed in the combination**, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

Response to Arguments

Applicant's arguments filed April 2006 have been fully considered but they are not persuasive. Applicant argues that amended claim 1, 6 and 8 now contain applying a *transient* result obtained from the measurement to a mathematical expression obtained by a system identification method. Examiner points to cited art Figure 1 item 14, which shows the transient display of impedance. Also note rejection above. Applicant argues that the cited art does not teach applying a current to a battery when the battery is not supplied with fuel. Examiners points out that this would be inherent to charging of batteries. Please note rejection above. In reference to claims 5,7 and 12 the applicant argues that fuel is not the same as "charge" however the examiner stills interprets the charge of a battery as fuel of the battery. The battery is charged when there is no charge or little charge in the battery.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Demetrius R. Pretlow whose telephone number is (571) 272-2278. The examiner can normally be reached on Mon.-Fri. 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Demetrius R. Pretlow Demetrius Pretlow 6/14/06

Patent Examiner

MICHAEL NGHIEM
PRIMARY EXAMINER